



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/989,161

11/21/2001

Masashi Aonuma

Q66561

9563

7590 04/30/2008
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

VAN HANDEL, MICHAEL P

ART UNIT

PAPER NUMBER

2623

MAIL DATE

DELIVERY MODE

04/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/989,161

Applicant(s)

AONUMA, MASASHI

Examiner

MICHAEL VAN HANDEL

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 9 and 11-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4, 9 and 11-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/02)
Paper No(s)/Mail Date 11/26/2007.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is responsive to an Amendment filed 2/07/2008. Claims **1-4, 9, 11-19** are pending. Claims **5-8, 10** are canceled. Claims **14-19** are new.

Response to Arguments

1. Applicant's arguments regarding claims **1** and **11**, filed 2/07/2008, have been fully considered, but they are not persuasive.

Regarding claim **1**, the applicant argues that the USB specification does not teach a buffer memory, which outputs data at a variable rate depending on the data transfer rate of the network. The applicant specifically argues that the available bandwidth has no bearing on the transfer rate of the network. The examiner respectfully disagrees. As noted in the Office Action mailed 11/13/2007, section 4.7.2 of the USB specification discloses that the bandwidth taken up by bulk data in a bulk data transfer can be whatever is available and not being used for other transfer types (USB Specification p. 33, 4.7.2 Bulk Transfers). The USB specification further discloses in section 5.8, that bulk transfers occur only on a bandwidth available basis, and further discloses that, for a USB with large amounts of free bandwidth, bulk transfers may happen relatively quickly, while for a USB with little bandwidth available, bulk transfers may trickle out over a relatively long period of time. Section 5.8 also states that bulk transfers can be deferred until bandwidth is available (USB Specification p. 58-59, 5.8 Bulk Transfers). Since the USB specification discloses transmitting an amount of data more quickly when large amounts of

bandwidth are available than when little bandwidth is available, the examiner maintains that the available bandwidth does affect the transfer rate of the network. Thus, the examiner maintains that the USB specification teaches that “the buffer memory outputs data at a variable rate depending on a transfer rate of the network,” as currently claimed.

Regarding claim 11, the applicant argues that the USB specification does not teach that the buffer, i.e. the client, re-transmits in the event of an error. The examiner respectfully disagrees. As noted in the Office Action mailed 11/13/2007, the USB specification states that bulk transfers may originate from the device or the client (USB Specification p. 212, 10.5.3.1.3 Bulk Transfers). If the received packet is corrupted, the receiver will not toggle its sequence bit. Figure 8-17 shows that in this case, the transaction is not acknowledged (NAKed) and then retried. That is, if the receiving end is the host and received data cannot be accepted or is corrupt, the host will send a NAK or STALL handshake and the transfer is retried. As shown in Figure 8-17, the retry still involves the transmitting end. If the retry is successful, the transmitter and receiver sequence bits will toggle (USB Specification p. 158, 8.6.3 Data Corrupted or Not Accepted). The examiner acknowledges the applicant’s argument that the client does not necessarily re-transmit in the event of an error; however, the examiner respectfully disagrees. Even if the host controller does initiate the retry of a transmission from a client to a device, the client will still be the one re-transmitting the data. As shown in Figure 8-17, a USB client attempts to transmit DATA0 to a receiving device. If the receiving device rejects the data as a transmission error, it sends a NAK message to the transmitting client. The transmitting client will then retry the transfer. If the second attempt is successful, the receiving device sends an ACK message to the transmitting client (Figure 8-17). As such, the examiner maintains that the

USB specification teaches that “the buffer memory retransmits the image data in the event of data loss during transfer over the network,” as currently claimed.

The applicant further argues that if the sequence bit is not toggled for the missed ACK case, the buffer would have to maintain its contents until the affirmative acknowledgement is received, and that therefore it is not inherent that the buffer could have sequential storage while outputting the image from the buffer, because reading of image data would have to be curtailed or the USB buffer would be lost. The examiner respectfully disagrees. A single error with a successful retry, for example, could happen relatively quickly and would not necessarily result in the USB buffer becoming lost. Furthermore, the examiner notes that the applicant has not claimed a scenario describing the sequential storing/sequential transmission of data in the event of continued transmission errors.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **14, 15** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Referring to claims **14** and **15**, the examiner fails to find support for the limitation “wherein the number of devices connected to the network remains constant during operation,” in Applicant’s specification. Applicant’s specification states that the image display apparatus 30, image information reading apparatus 10, image processing apparatus 51, image recording apparatus 52, and image output apparatus 53 may all be connected to the network 40, and that the transfer speed for the image data from the image information reading apparatus 10 to the image display apparatus 30 can change depending on how the network is being used (p. 16, lines 6-15). The examiner fails; however, to find any disclosure stating that the number of devices connected to the network remains constant during operation.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1-4**, **9**, **11**, **14**, and **15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Camara et al. in view of the Universal Serial Bus (USB) Specification, Revision 1.0.

Referring to claim **1**, Camara et al. discloses an image data transfer system comprising an image information reading apparatus (scanner 24) for reading image data representing an image from a sheet having the image recorded therein and an image display apparatus (computer 22) connected to the image information reading apparatus by a network (universal serial bus (USB) 50)(Fig. 1), the image data read by the image information reading apparatus being transferred to

the image display apparatus and the image display apparatus displaying the image data as a visible image (Fig. 5), wherein the image information reading apparatus comprises a buffer memory for storing the image data for the sheet and sequentially stores in the buffer memory the image data obtained at the time of reading the image data while sequentially outputting the image data from the buffer memory (the examiner notes that buffer memory is inherent to the scanner 24 in order to transfer data on a USB network (see USB Specification Revision 1.0, p. 34, 4.7.5, which states that USB devices are required to provide some buffering of data) and that data must be sequentially stored in this buffer memory, while being sequentially output in order to progressively display the image as that taught by Camara et al.)(col. 5, l. 54-61).

Camara et al. does not specifically disclose that the buffer memory outputs data at a variable rate depending on a data transfer rate of the network; however, the USB specification discloses a bulk transfer type of data transfer that is typically used for scanners. A bulk transfer can occur relatively quickly if there is a large amount of free bandwidth or may trickle out over a relatively long period of time if there is little bandwidth available (USB Specification p. 59, top of page). The USB specification further states that bulk transfers may be delayed until bandwidth is available (USB Specification p. 50, definition of "Bulk Transfers"). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the networked scanner of Camara et al. to include transferring data at a rate according to available bandwidth, such as that taught by the USB specification in order to support devices that need to communicate relatively large amounts of data at highly variable times (USB Specification p. 58, 5.8 Bulk Transfers).

Referring to claim **2**, the combination of Camara et al. and the USB specification teaches the image data transfer system according to claim 1, wherein the image display apparatus is separately and independently housed from the image information reading apparatus (Camara et al. Fig. 1).

Referring to claim **3**, the combination of Camara et al. and the USB specification teaches the image data transfer system according to claim 1, wherein the network utilizes one of Ethernet, Universal Serial Bus (see claim 1) and FireWire (IEEE 1394) connection.

NOTE: The USPTO considers the applicant's "one of" language to be anticipated by any reference containing any of the subsequent corresponding elements.

Referring to claim **4**, the combination of Camara et al. and the USB specification teaches the image data transfer system according to claim 1, wherein the image display apparatus sequentially displays the image data from a first image from the buffer memory of the image information reading apparatus while the image information reading apparatus reads the image data of said first image from the sheet (see claim 1).

Referring to claim **9**, the combination of Camara et al. and the USB specification teaches the system of claim 2, wherein the buffer memory is incorporated in a housing of the image information reading apparatus (the examiner notes that it is inherent that a buffer be included in the scanner in order to transfer data on a USB network).

Referring to claim **11**, Camara et al. discloses an image data transfer system comprising an image information reading apparatus (scanner 24) for reading image data representing an image from a sheet having the image recorded therein and an image display apparatus (computer 22) connected to the image information reading apparatus by a network (universal serial bus

(USB) 50)(Fig. 1), the image data read by the image information reading apparatus being transferred to the image display apparatus and the image display apparatus displaying the image data as a visible image (Fig. 5), wherein the image information reading apparatus comprises a buffer memory for storing the image data for the sheet and sequentially stores in the buffer memory the image data obtained at the time of reading the image data while sequentially outputting the image data from the buffer memory (the examiner notes that buffer memory is inherent to the scanner 24 in order to transfer data on a USB network (see USB Specification Revision 1.0, p. 34, 4.7.5, which states that USB devices are required to provide some buffering of data) and that data must be sequentially stored in this buffer memory, while being sequentially output in order to progressively display the image as that taught by Camara et al.)(col. 5, l. 54-61).

Camara et al. does not specifically disclose that the buffer memory retransmits the image data in the event of data loss during transfer over the network; however, the USB specification discloses ensuring the reliable exchange of data by using error detection and invoking a limited hardware retry (USB Specification p. 33, 4.7.2). The USB specification further discloses detecting a transfer error/failure and retrying the transfer (USB Specification p. 31, 4.5.1 & 4.5.2; p. 158, 8.6.3 Data Corrupted or Not Accepted; & p. 212, 10.5.3.1.3 Bulk Transfers). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the networked scanner of Camara et al. to include retrying a data transfer in response to detecting a transfer error, such as that taught by the USB specification in order to ensure data integrity.

Referring to claims **14** and **15**, the combination of Camara et al. and the USB specification teaches the system of claims 1 and 11, respectively. The combination of Camara et al. and the USB specification does not specifically teach that the number of devices connected to the network remains constant during operation; however, the examiner takes Official Notice that it was notoriously well known within the prior art at the time that the invention was made for a user to have a certain number of devices continually connected to a USB hub, while performing an operation with one of the devices. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the combination of Camara et al. and the USB specification to maintain a certain number of devices connected to the USB network, while performing an operation with one of the devices, such as that taught by the prior art in order to provide a user with the convenience of maintaining connections to frequently used devices, while using one of the devices.

Referring to claims **16** and **17**, the combination of Camara et al. and the USB specification teaches the system of claims 1 and 11, respectively. The combination of Camara et al. and the USB specification does not specifically teach that the buffer memory is of sufficient size to hold the entire image data from the sheet; however, the examiner takes Official Notice that it was well known within the prior art at the time that the invention was made to include a buffer with enough memory to store the data of an entire image. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the buffer in the combination of Camara et al. and the USB specification to include enough memory to store the data of an entire image, such as that taught by the prior art in order to prevent buffer overflow.

Referring to claims **18** and **19**, the combination of Camara et al. and the USB specification teaches the system of claims 1 and 11, respectively, wherein the image data obtained at the time of reading the image data is sequentially stored in the buffer memory and is simultaneously sequentially output from the buffer memory (the examiner notes that buffer memory is inherent to the scanner 24 in order to transfer data on a USB network (see USB Specification Revision 1.0, p. 34, 4.7.5, which states that USB devices are required to provide some buffering of data) and that data must be sequentially stored in this buffer memory, while being sequentially output in order to progressively display the image as that taught by Camara et al.)(col. 5, l. 54-61), wherein the buffer memory outputs data at a variable rate depending on a data transfer rate of the network (USB Specification p. 59, top of page & p. 50, definition of “Bulk Transfers”).

3. Claims **1**, **12**, **13**, **14**, **16**, and **18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigyo et al. in view of Camara et al. and further in view of the Universal Serial Bus (USB) Specification, Revision 1.0.

Referring to claim **1**, Shigyo et al. discloses an image data transfer system transfer system comprising an image information reading apparatus 14 for reading image data representing an image from a sheet having the image recorded therein (col. 6, l. 23-30 & Fig. 1) and an image display apparatus 20 connected to the image information reading apparatus by a network, the image data read by the image information reading apparatus being transferred to the image display apparatus and the image display apparatus displaying the image data as a visible image (col. 6, l. 33-40). Shigyo does not disclose that the image information reading apparatus

comprises a buffer memory for storing the image data for the sheet and sequentially stores in the buffer memory the image data obtained at the time of reading the image data while sequentially outputting the image data from the buffer memory. Camara et al. discloses a scanner 24 with a Universal Serial Bus (USB) connection to a computer 22 with a display 48 (Fig. 1). The examiner notes that a buffer is inherent to a USB device. Camara et al. further discloses that, in response to a Scan/Open command, the scanner scans an image. Concurrently with this scanning action, the image progressively appears in the preview scan space 124 to visually convey that the scanner is scanning the image. In one implementation, the image is progressively displayed row-by-row from top to bottom of the image (col. 5, l. 54-61). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the network of Shigyo to progressively display an image as it is being scanned, such as that taught by Camara et al. in order to keep a user updated on the progress of a data transfer.

The combination of Shigyo et al. and Camara et al. does not specifically teach that the buffer memory outputs data at a variable rate depending on a data transfer rate of the network; however, the USB specification a bulk transfer type of data transfer that is typically used for scanners. A bulk transfer can occur relatively quickly if there is a large amount of free bandwidth or may trickle out over a relatively long period of time if there is little bandwidth available (USB Specification p. 59, top of page). The USB specification further states that bulk transfers may be delayed until bandwidth is available (USB Specification p. 50, definition of "Bulk Transfers"). It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the combination of Shigyo et al. and Camara et al. to include transferring data at a rate according to available bandwidth, such as that taught by the USB

specification in order to support devices that need to communicate relatively large amounts of data at highly variable times (USB Specification p. 58, 5.8 Bulk Transfers).

Referring to claim **12**, the combination of Shigyo et al., Camara et al., and the USB specification teaches the system of claim 1, wherein the image information reading apparatus comprises an erasing unit for erasing data from the sheet after reading out the image recorded therein (Shigyo et al. col. 6, l. 49-53).

Referring to claim **13**, the combination of Shigyo et al., Camara et al., and the USB specification teaches the system of claim 1, wherein the image information is medical information (images such as a chest, a stomach, a bone, etc.)(Shigyo et al. col. 6, l. 23-49; col. 8, l. 10-15; col. 11, l. 31-35; & Fig. 1).

Referring to claim **14**, the combination of Camara et al. and the USB specification teaches the system of claim 1. The combination of Camara et al. and the USB specification does not specifically teach that the number of devices connected to the network remains constant during operation; however, the examiner takes Official Notice that it was notoriously well known within the prior art at the time that the invention was made for a user to have a certain number of devices continually connected to a USB hub, while performing an operation with one of the devices. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the combination of Shigyo et al., Camara et al., and the USB specification to maintain a certain number of devices connected to the USB network, while performing an operation with one of the devices, such as that taught by the prior art in order to provide a user with the convenience of maintaining connections to frequently used devices, while using one of the devices.

Referring to claim **16**, the combination of Camara et al. and the USB specification teaches the system of claim 1. The combination of Camara et al. and the USB specification does not specifically teach that the buffer memory is of sufficient size to hold the entire image data from the sheet; however, the examiner takes Official Notice that it was well known within the prior art at the time that the invention was made to include a buffer with enough memory to store the data of an entire image. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the buffer in the combination of Shigyo et al., Camara et al., and the USB specification to include enough memory to store the data of an entire image, such as that taught by the prior art in order to prevent buffer overflow.

Referring to claim **18**, the combination of Shigyo et al., Camara et al., and the USB specification teaches the system of claim 1, wherein the image data obtained at the time of reading the image data is sequentially stored in the buffer memory and is simultaneously sequentially output from the buffer memory (the examiner notes that buffer memory is inherent to the scanner 24 in order to transfer data on a USB network (see USB Specification Revision 1.0, p. 34, 4.7.5, which states that USB devices are required to provide some buffering of data) and that data must be sequentially stored in this buffer memory, while being sequentially output in order to progressively display the image as that taught by Camara et al.)(col. 5, l. 54-61), wherein the buffer memory outputs data at a variable rate depending on a data transfer rate of the network (USB Specification p. 59, top of page & p. 50, definition of “Bulk Transfers”).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL VAN HANDEL whose telephone number is (571)272-5968. The examiner can normally be reached on 8:00am-5:30pm Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chris Kelley/
Supervisory Patent Examiner, Art Unit
2623

MVH